ABSTRACT OF THE DISCLOSURE

The present disclosure provides compositions and sequences for the diagnosis, genetic therapy of certain muscular dystrophies, especially muscular dystrophy resulting from a deficiency in dystrophin protein or a combined deficiency in dystrophin and utrophin, and methods and compositions for the identification of compounds which increase expression of the α7 integrin. Expression of the integrin αBX2 polypeptide in muscle cells results in better physical condition in a patient or an animal lacking normal levels of dystrophin or dystrophin and utrophin. The present disclosure further provides immunological and nucleic acid based methods for the diagnosis of scapuloperoneal muscular dystrophy, where there is a reduction in or absence of α7A integrin expression in muscle tissue samples and normal levels of laminin-2/4 in those same samples. The present disclosure further provides methods for identifying compositions which increase the expression of α7 integrin protein in muscle cells of dystrophy patients.